STATEMENT 2.—DIAGRAM No. 2.

Showing the Infant death-rate for 1,000 births registered in the City of Bangalore for the year 1907-08, compared with that of the previous year (1906-07).

(Shown quarterly.)

Quarters	1907-08			1906-07			Remarks
	Number of births registered	Death of children under 1 year	Death rate of children under 1 year to 1,000 births registered	Number of births registered	Death of children under 1 year	Death rate of children under 1 year to 1,000 births registered	
First quarter	406	207	509	472	229	485	
Second do	424	237	559	403	213	528	
Third do	408	218	534	302	226	748	
Fourth do	458	229	500	310	173	558	

DIAGRAM No. 1.

Birth and death rates for the year 1907-1908.

(Quarterly rates per annum.)

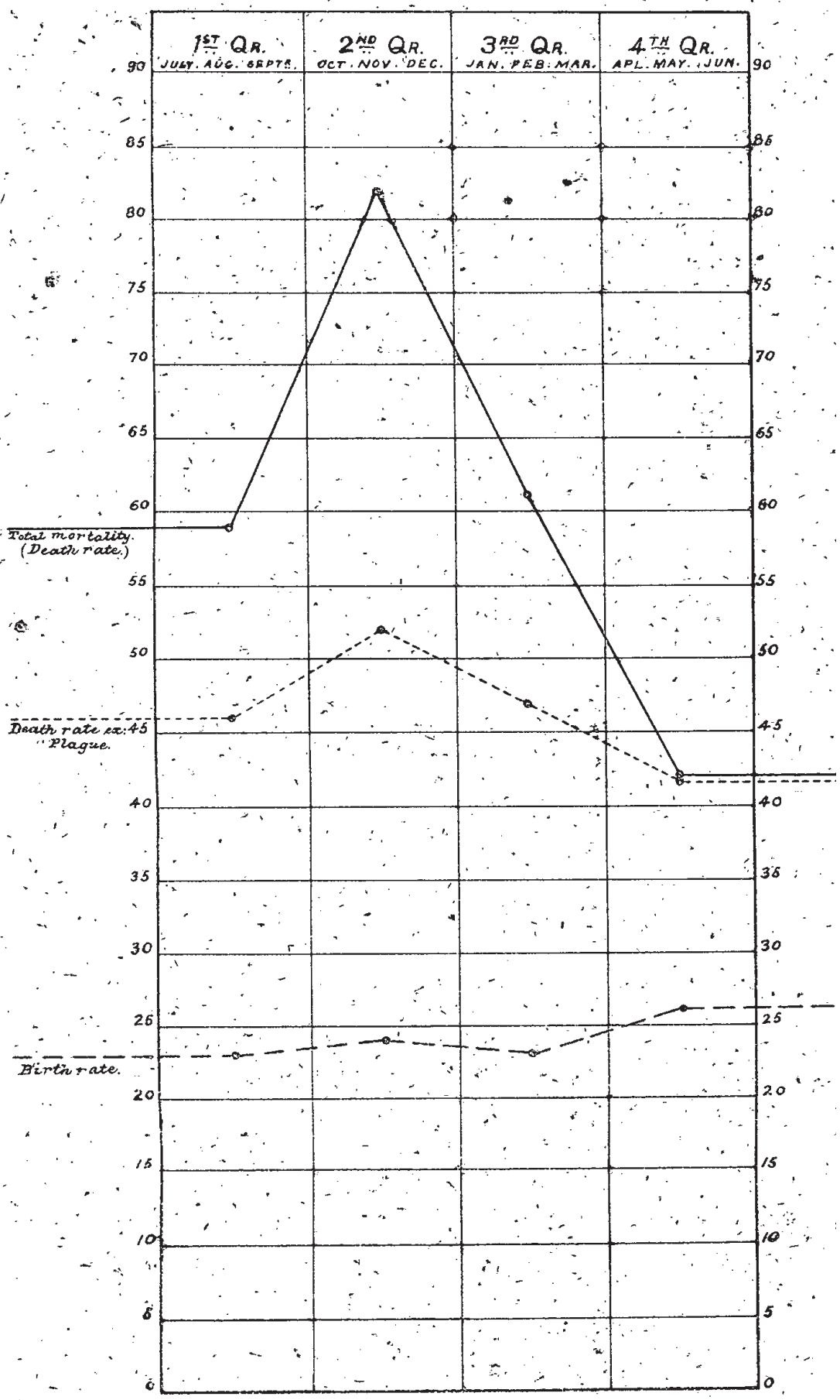


DIAGRAM No. 1(A).

Birth and Death rates per 1,000 of Population for the year 1907-08. as compared with that of the prveous year.

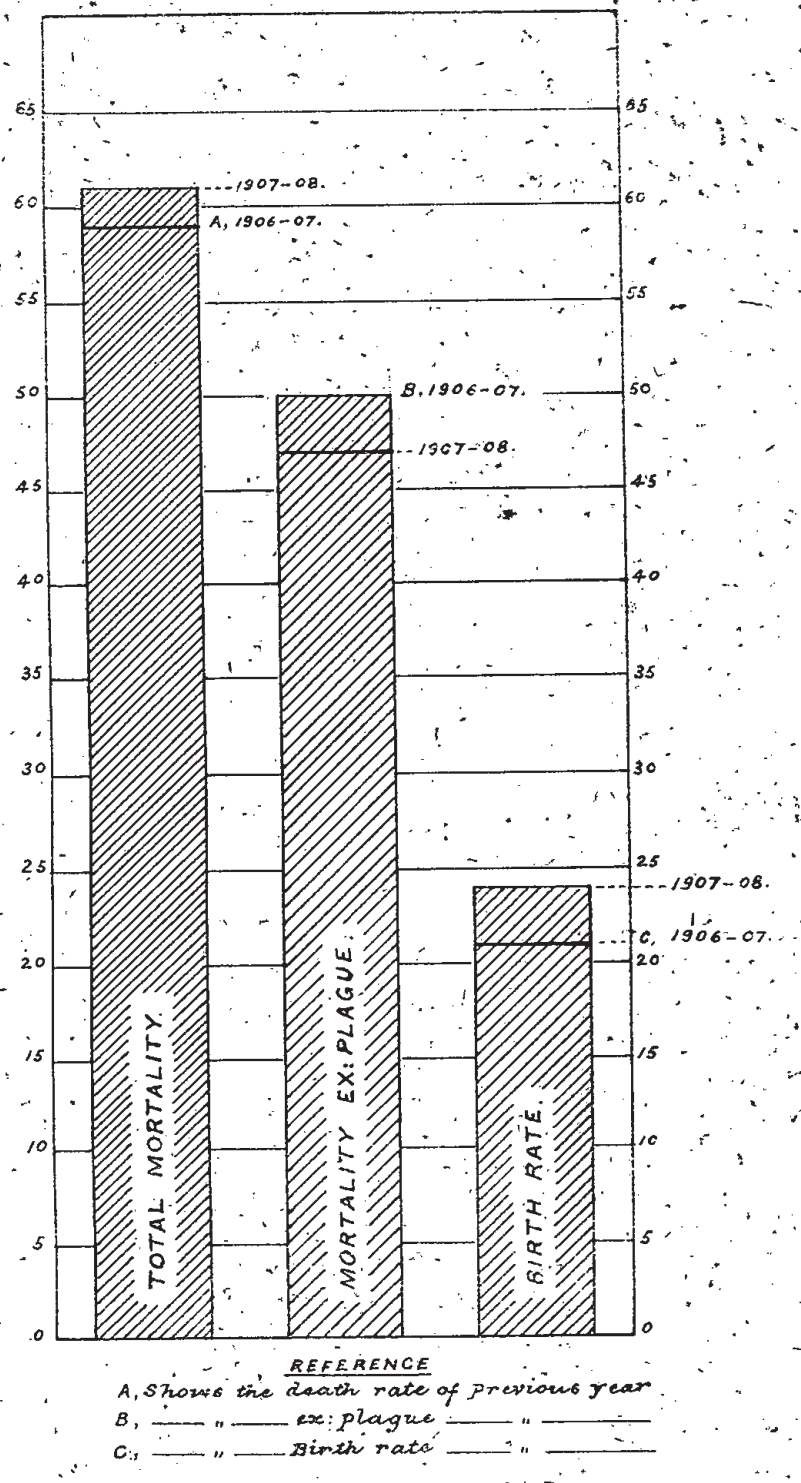


DIAGRAM No. 2.

Infant death rate per 1,000 births registered for the years 1907-1908 and 1906-1907.

Shown quarterly.

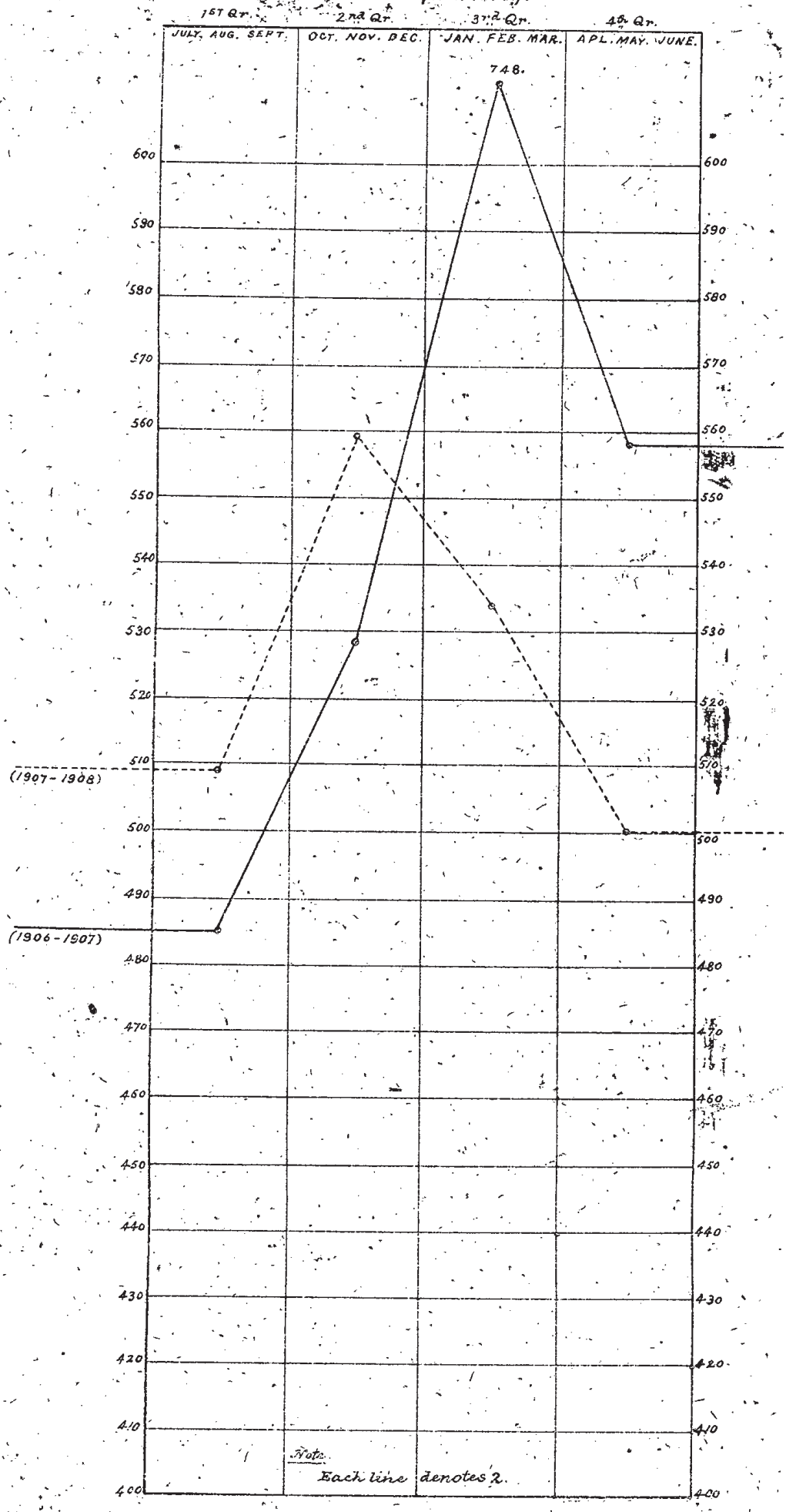


DIAGRAM No. 3.

Birth rates per 1,000 of Population of each Division for the year 1907-1908.

(Quarterly rates per annum.)

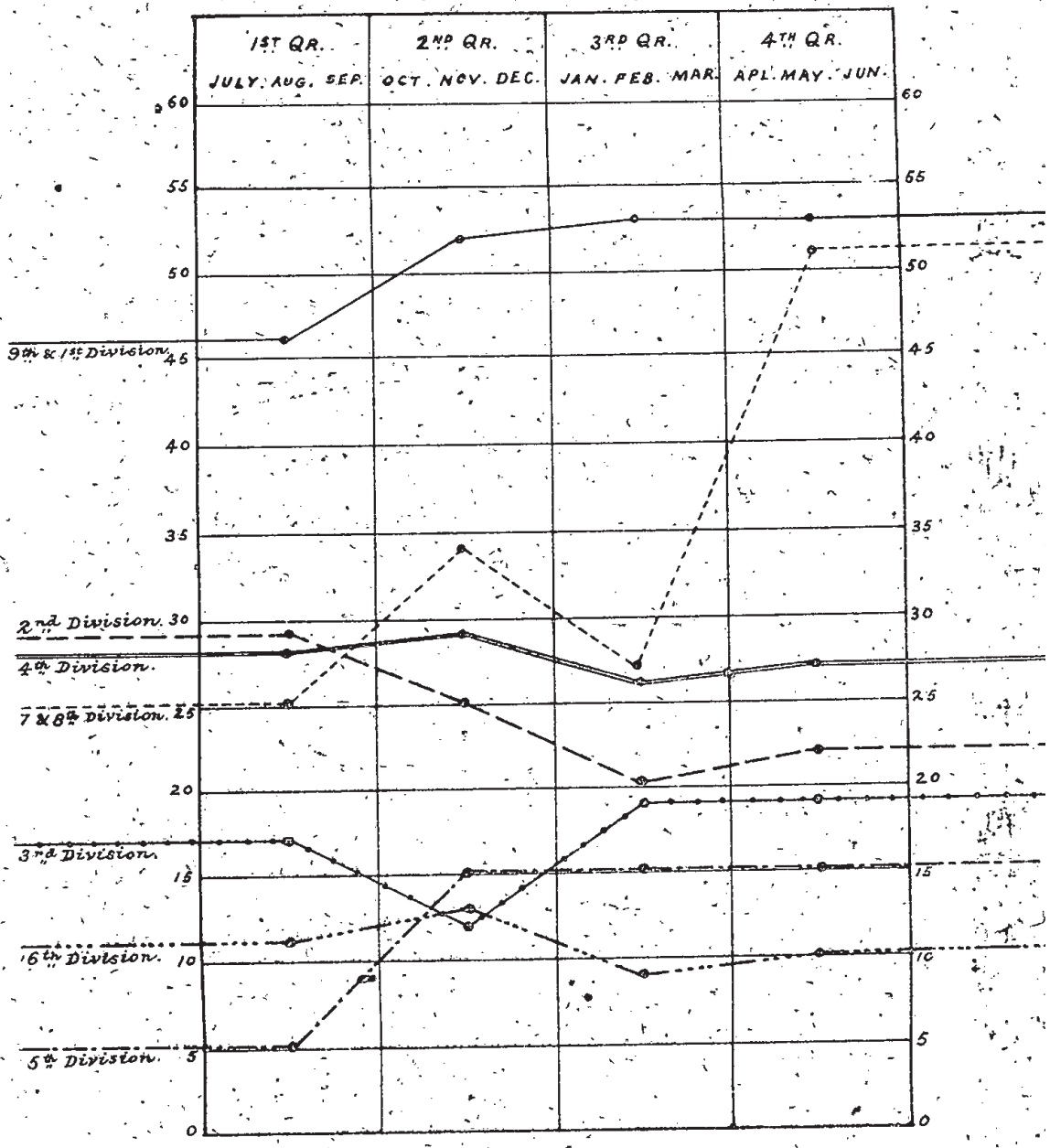


DIAGRAM No. 4.

Death rates per 1,000 of Population of each Division for the year 1907-1908.

(Quarterly rates per annum.)

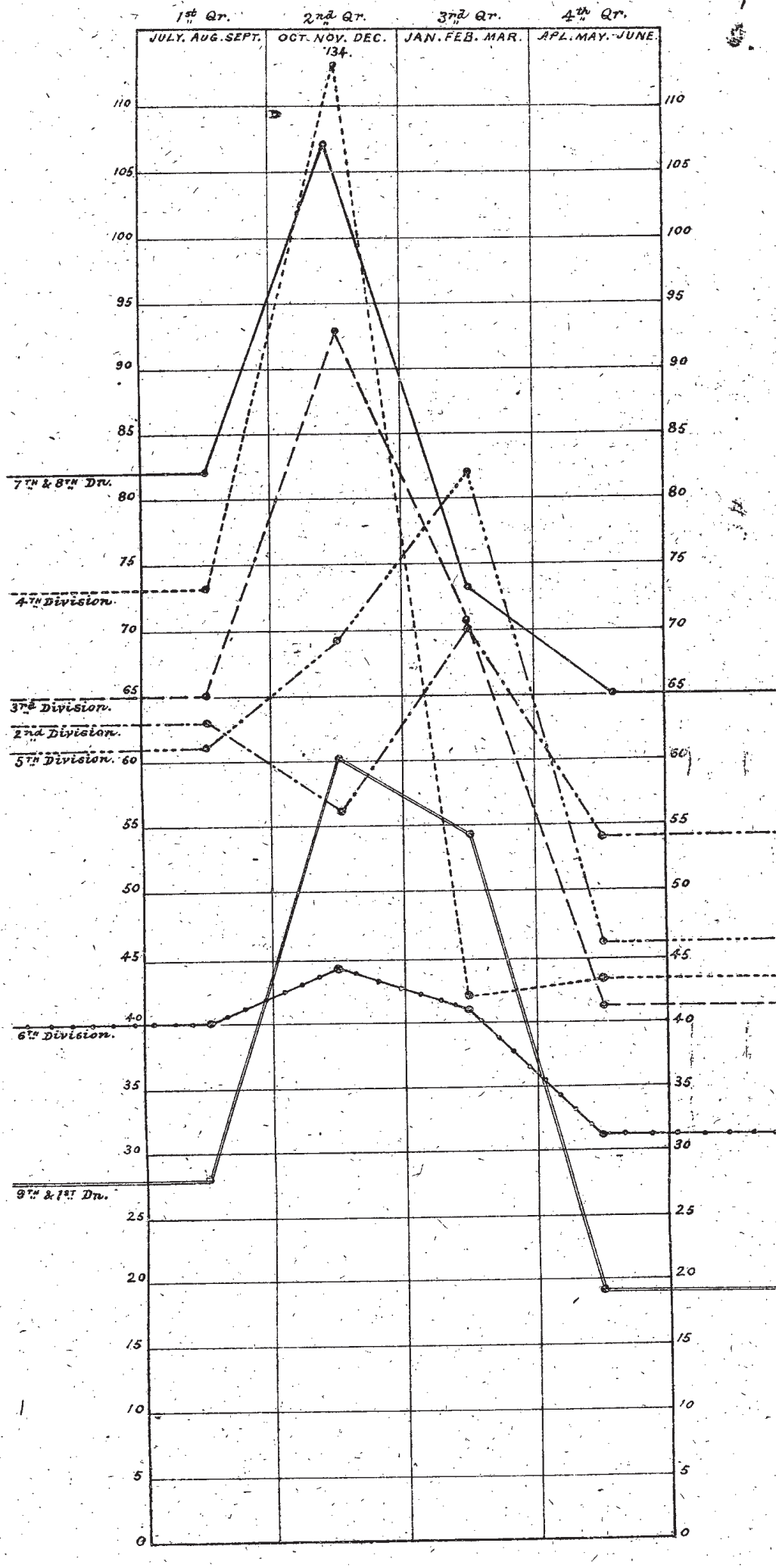


DIAGRAM No. 5.

Birth rates per 1,000 of Population, by races for the year 1907-1908.

(Quarterly rates per annum.)

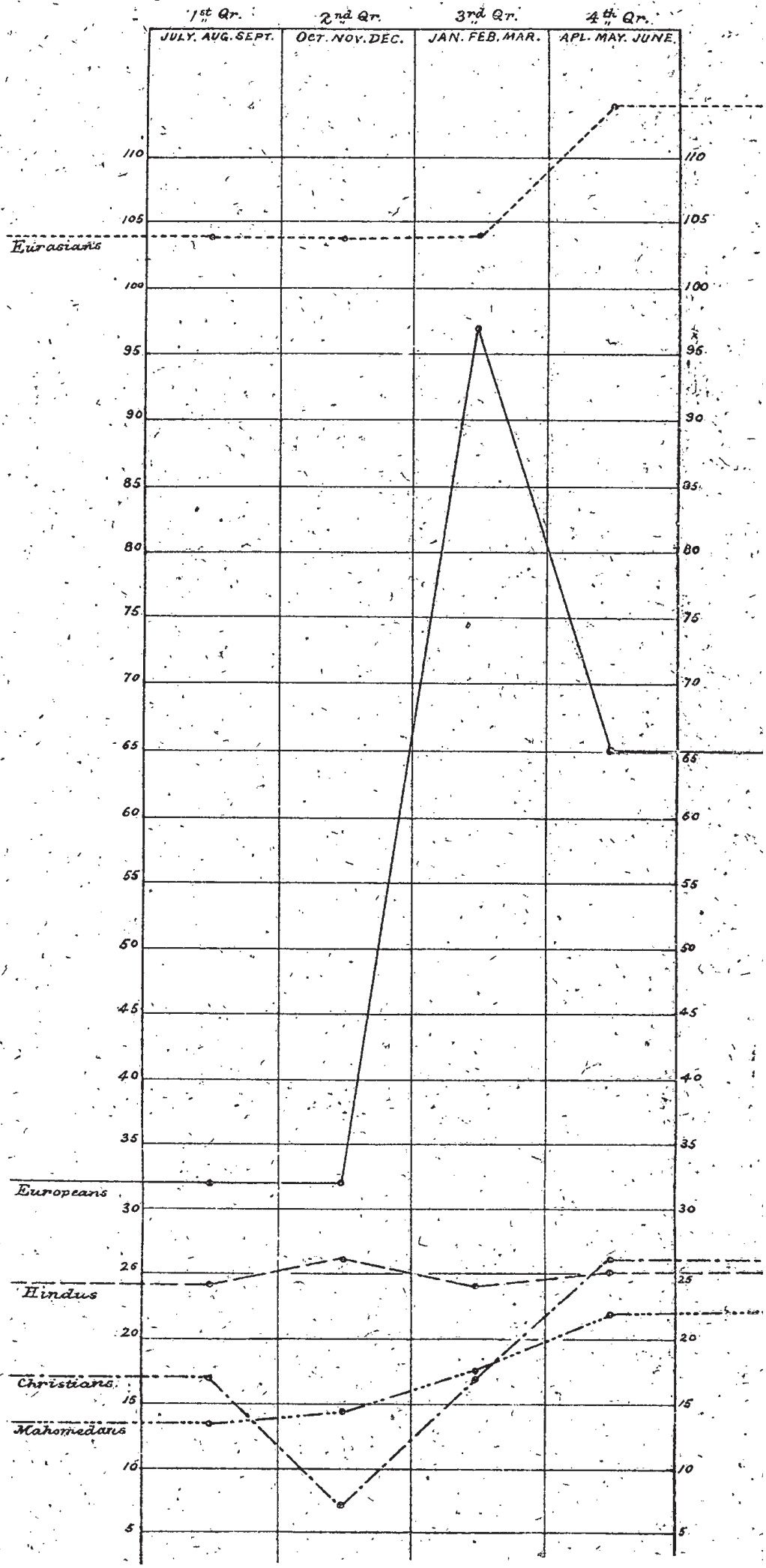


DIAGRAM No. 6.

Death rates per 1,000 of Population by races for the year 1907-1908.

(Quarterly rates per annum.)

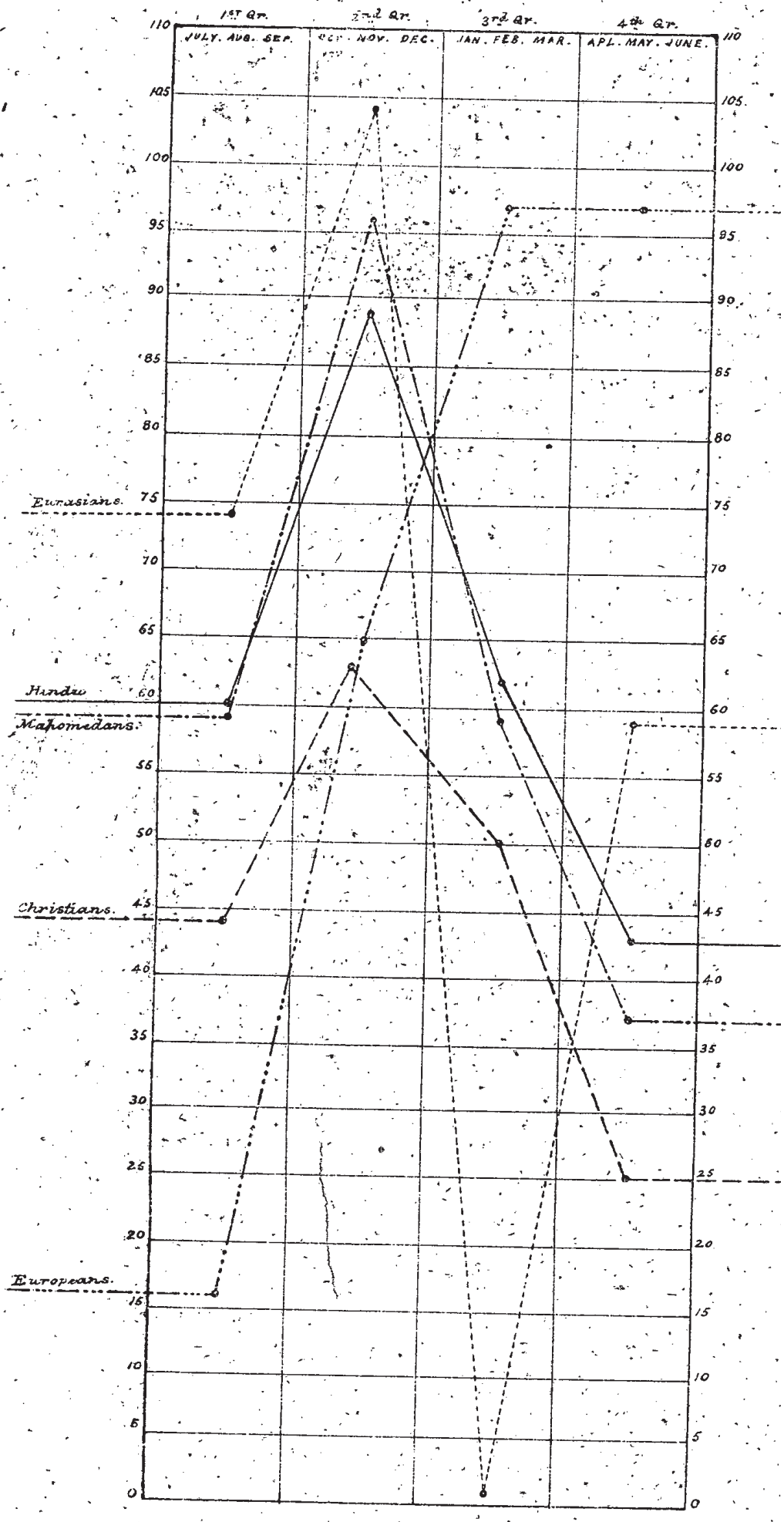
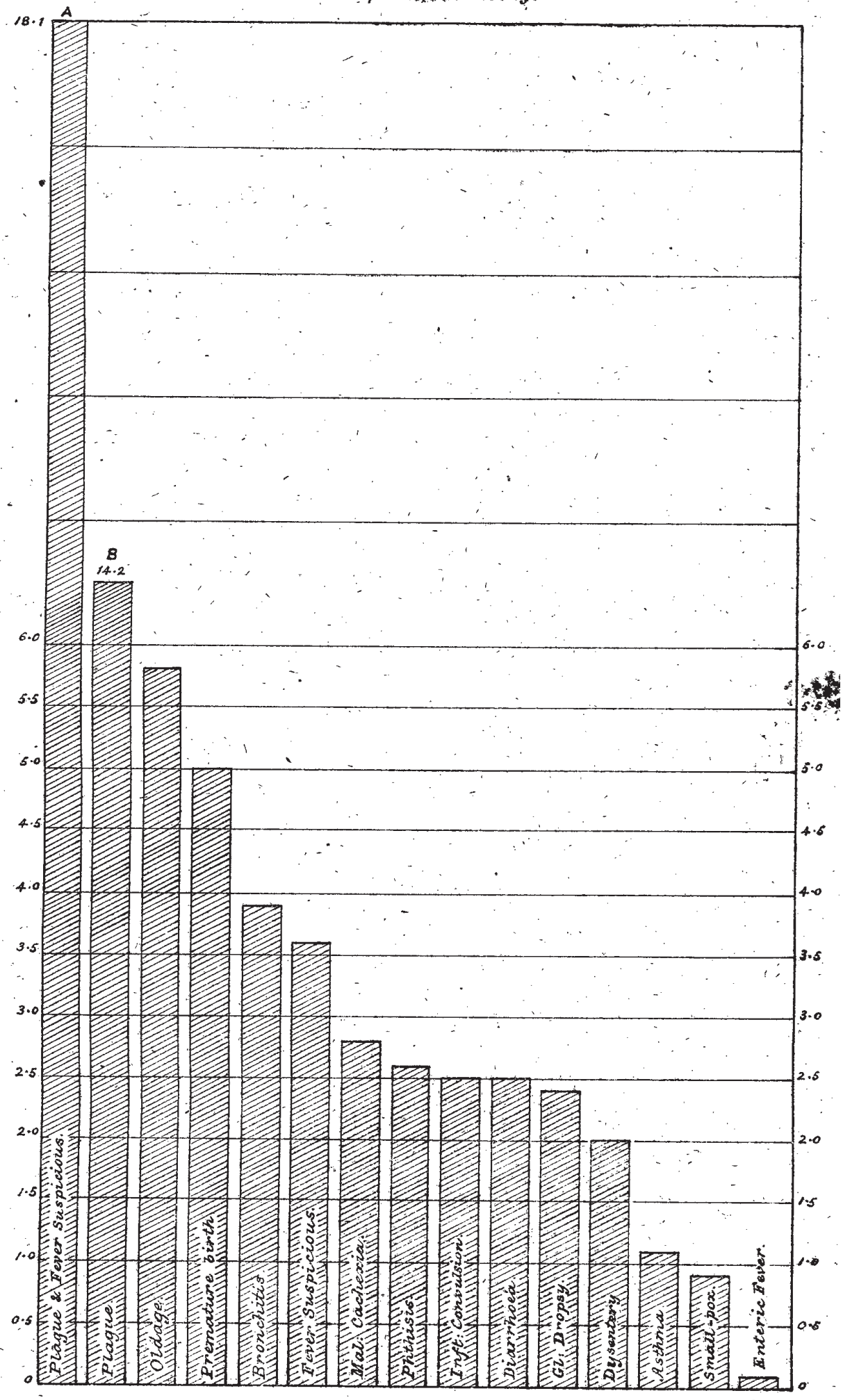


DIAGRAM No. 7.

Principal causes of death in Bangalore City for the year 1907-1908.

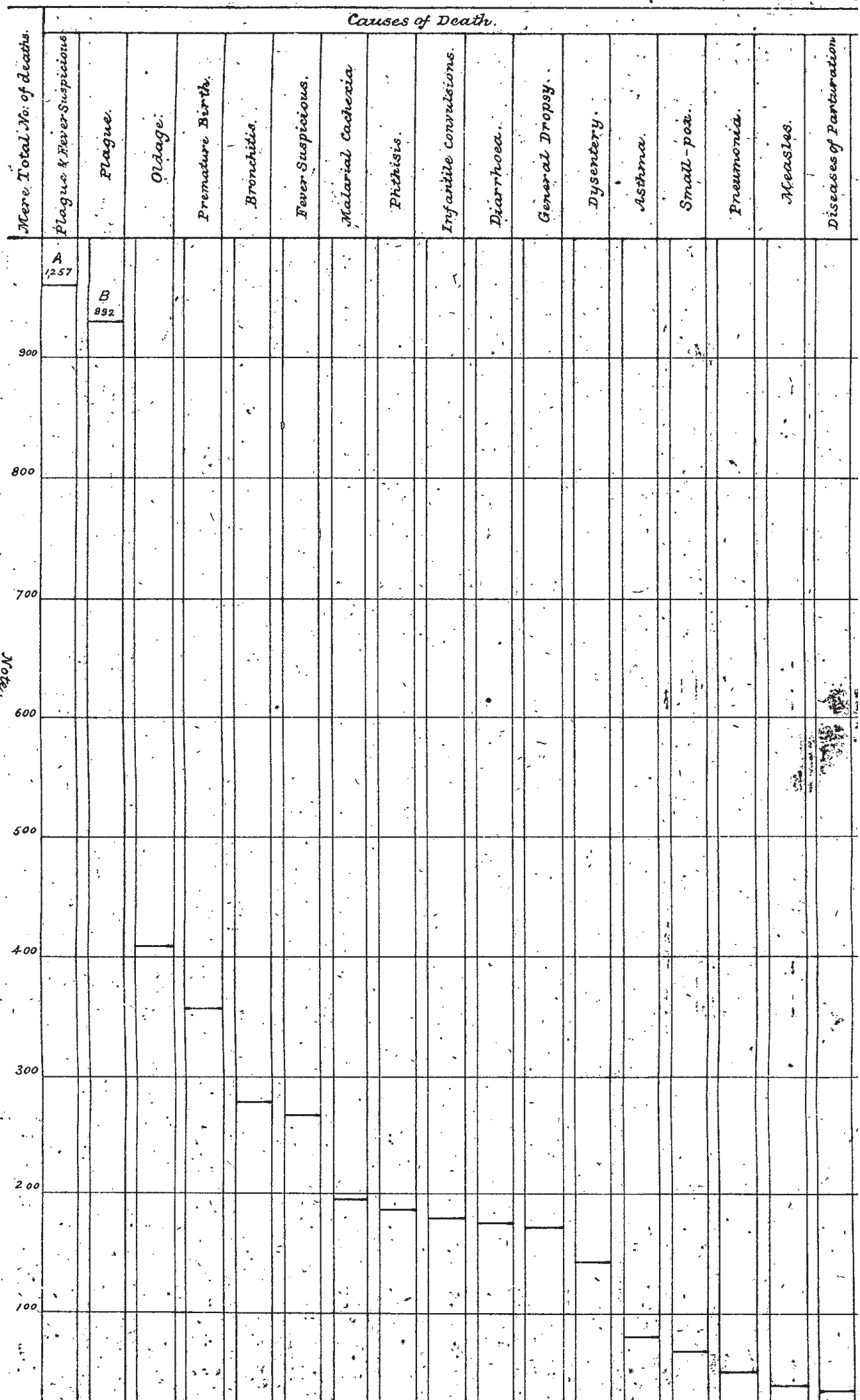
Rate per 1,000 living.



Note. A and B first two columns are not shown in full length for want of space.

DIAGRAM No. 7(A).

Principal causes of death in Bangalore City for the year 1907-1908.



Note.

A and B first two columns are not shown in full length for want of space.

DIAGRAM No. 8.

Order of divisions according to births and deaths for 1907-1908.

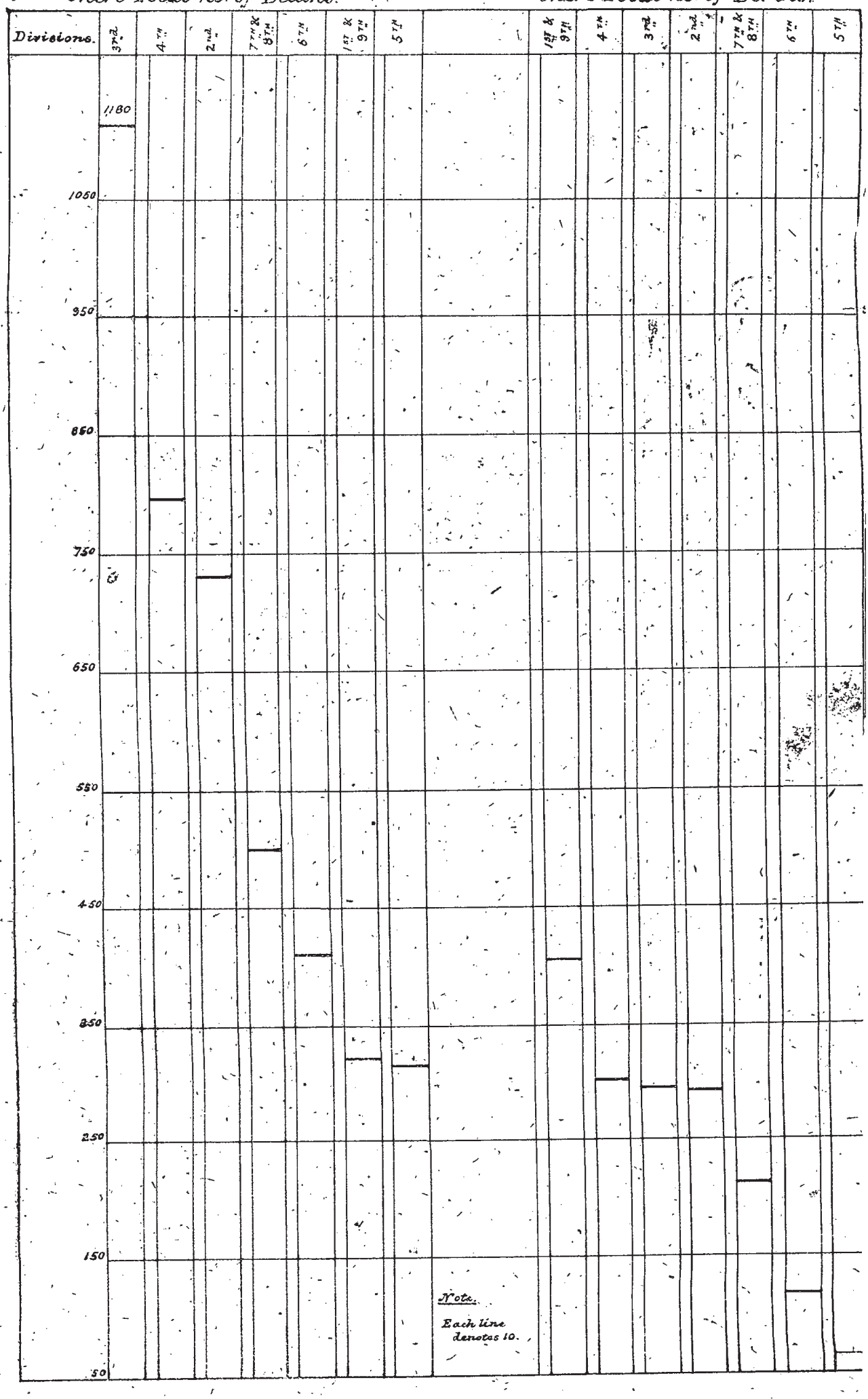
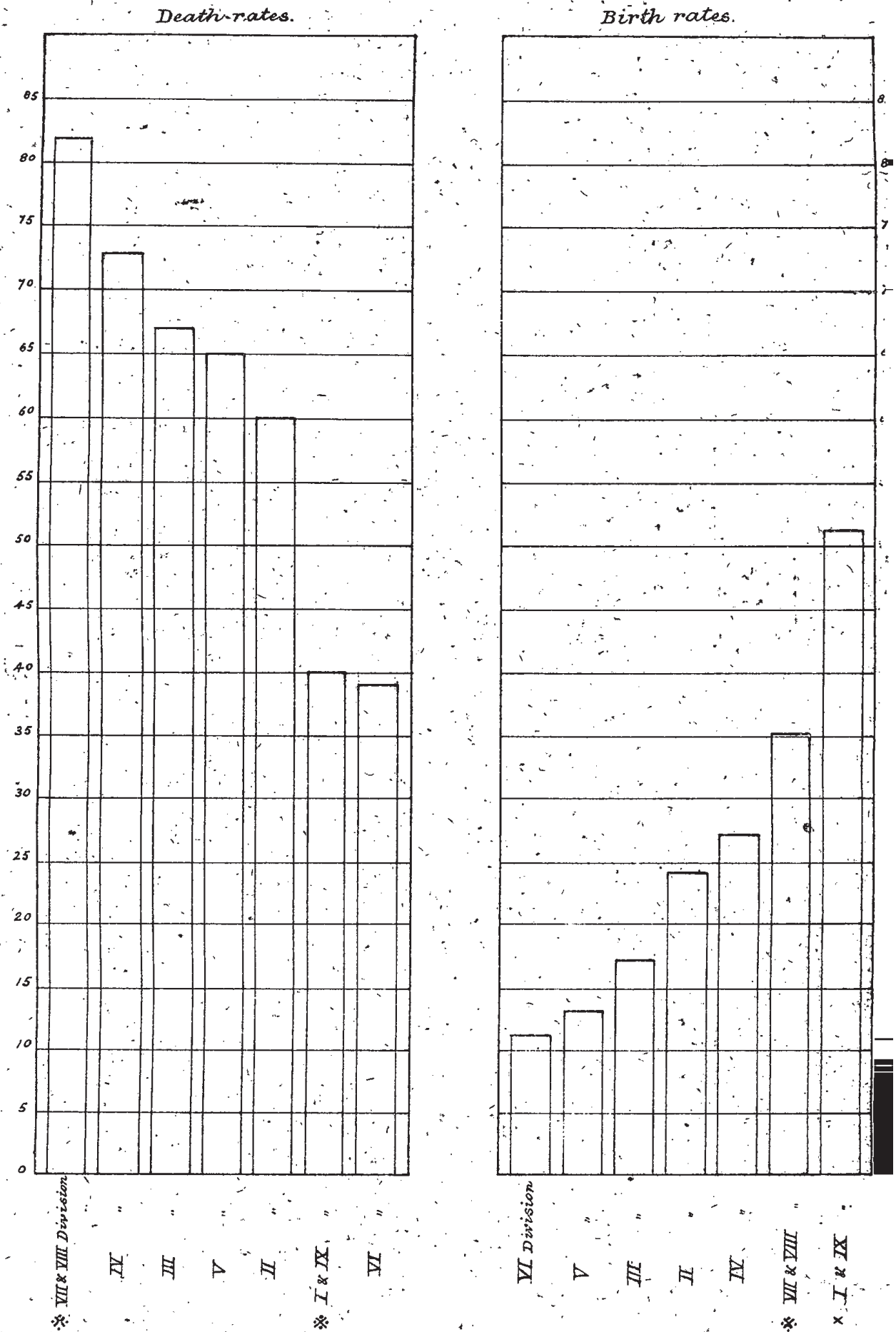


DIAGRAM No. 8(A).

Order of divisions according to birth and death rates for the year 1907-1908.

(Rate per 1,000 living per annum.)



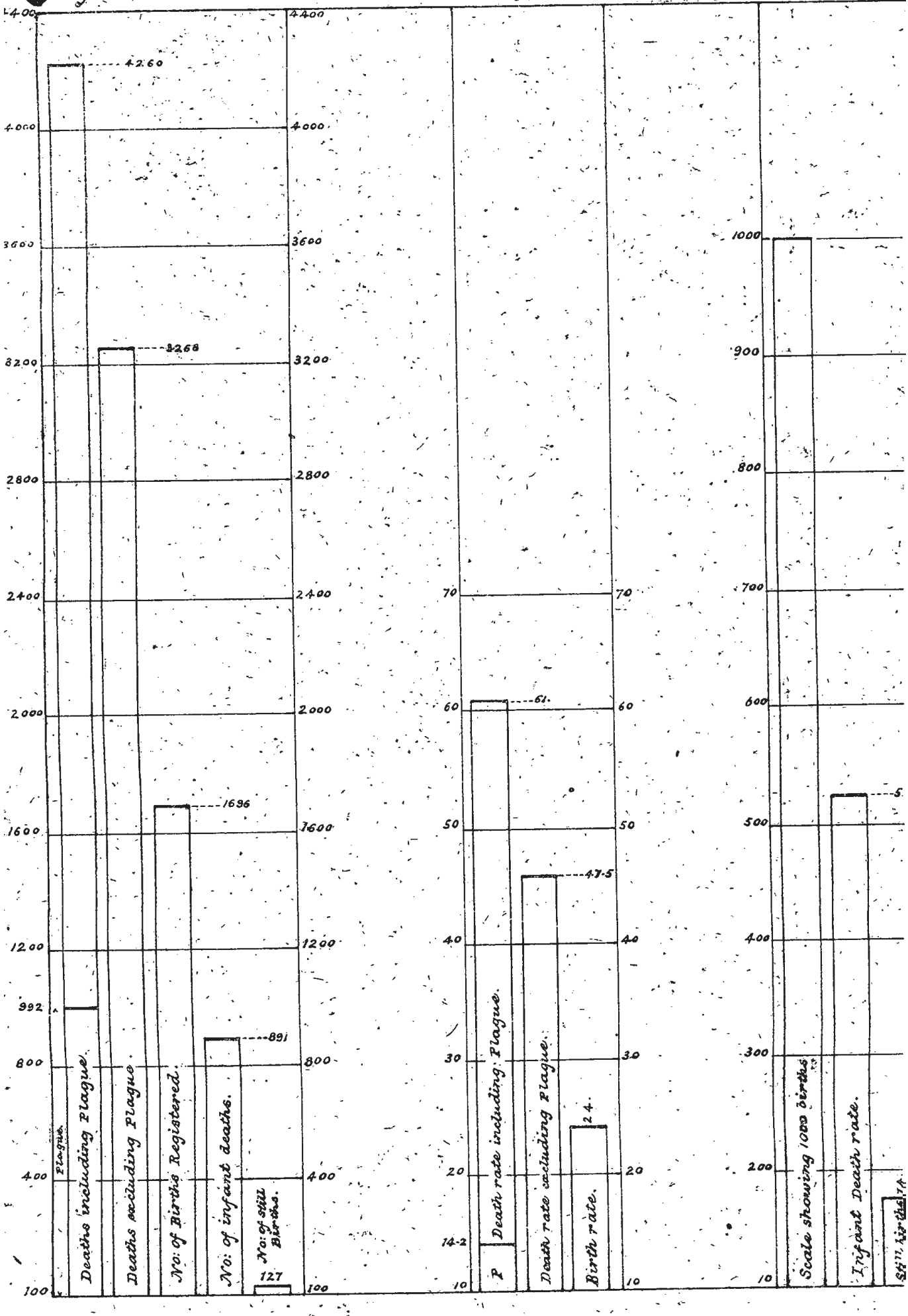
※ The ratios cannot be correct as they are worked out on the last Census populations by these Divisions. Populations in these Divisions have increased enormously mostly of people migrating from City proper, also the location of Victoria Hospital accounts for high number.

DIAGRAM No. 9.

Mere total number for 1907 – 1908.

Rates per 1000 living for 07-08.

Rates per 1000 registered.



Statement showing the interval between the service of notices to the parties and the date of instituting prosecution.

Total number of prosecutions	Under 1 month	1 and under 2 months	2 and under 3 months	3 and under 4 months	4 and under 5 months	Remarks
145	62	41	17	15	10	

Work done by Sanitary Inspectors, for the year 1907-08.

Name of Sanitary Inspectors	Number of premises visited by Sanitary Inspectors	Number of premises in which Sanitary defects were found	Number of notices issued	Number of premises where Sanitary defects were rectified after warning	Number of wells closed	Number of cess pits emptied and filled up	Number of prosecutions	Number of convictions	Number discharged	Number of cases withdrawn	Number pending at the end of the year	Fines imposed by the Magistrate	Fines collected and credited in (1906-07)
												Rs. a. p.	
(A) Kumaraswamy Mudaliar.	3,930	1,424	1,007	487	3	68	61	41	14	6	...	41 0 0	...
(B) Gnanakan ...	4,733	2,738	1,141	219	1	36	46	26	15	5	...	39 4 0	...
(C) Gullamallikhan	518	319	269	89	...	1	31	14	4	7	6	44 8 0	...
(D) Varadaraju ...	404	198	172	53	...	...	7		1	2	1	1 0 0	...
Total ...	*9,575	*4,679	2,589	848	4	105	145	84	34	20	7	125 12 0	37 12 0

Note—A and B are two qualified Sanitary Inspectors who abate nuisances inside premises.
C and D are two unqualified Sanitary Inspectors who are in charge of scavenging and conservancy.
* Please note that every 2nd house has some nuisance or other.

Statement showing the number of nuisances abated under different sections of Municipal Regulations, for the year 1907-08.

Name of Sanitary Inspectors	Number of nuisances abated	Section 141		109			101	132	119	129	125	135	94	96	151
		Filthy premises	Ventilation	Cess-pit	Wicket door	Amendments of previes	House connection drain	Limewashing	Dangerous buildings	Cattle nuisances	Obstruction on road	Wells closed	Inflammable materials	Building without license	Trade nuisance
Kumaraswamy Mudaliar.	487	92	66	68	26	44	106	55	2	19	....	3	1	3	2
Gnanakan ...	119	66	39	36	2	23	30	19	...	3	...	1	...	...	...
Gulamallikhan ...	89	5	1	1	36	...	6		2	...	14	...	...	34	...
Varadaraju ..	53	10	...	...	1	8			1	...	11	...	5	17	...
Total	848	173	106	05	55	75	142	74	5	22	25	4	6	54	2

Details of prosecutions by Sanitary Inspectors for the year 1907-08

Name of Sanitary Inspectors	Inflammable materials	Triming of hedges	Obstruction on road	Building without license	Trade nuisance	Amendments of privies cesspits, etc.	For house connection drains	For filthy premises	For not limewashing	Demolition of dangerous buildings	Total	Remarks
Kumarasawmy Mudaliar	..	2	3	2	3	42	3	2	3	1	61	
Gnanakan	1	2	1		...	27	3	9	...	1	46	
Gulamallikhan	2	...	3		...	17	1	...	...	2	31	
Varadaraju		1	...	6	...	...	...	...	...	...	7	
Total		5	7	16	3	86	7	11	3	4	145	

Health Office, Bangalore, dated 23rd March 1908.

From—The Health Officer, City Municipal Council, Bangalore.

To—The President, City Municipal Council, Bangalore.

SIR,

I have to honor to submit my report on the state of the dairies within Municipal limits with a set of draft bye-laws, to keep them under Municipal control for the sake of cleanliness of the dairy premises and for the proper protection of milk and milk products from contamination, consistent with Municipal Regulation, Section 48, (Rule (*e*) (1 & 2).

On my assuming charge of the City, I visited several dairies in the City and on finding almost all the dairies situated in most crowded and insanitary localities and kept in most filthy state possible, I arranged to get detailed statistics but with my little time at my disposal on account of plague, I was not able to report on the same earlier. In all civilised cities the dairies receive the constant attention of the Health Department next to infectious diseases as several of the infectious diseases are carried through milk which acts as a very good liquid medium for all disease producing germs to grow in it.

From the annexed statement it will be seen that there are 301 dairies where milk and milk-products are kept for sale, out of these only 8 dairies are detached from the dwellings, the remaining 293 are attached to dwellings under the same roof with bipeds and quadrapeds living together. The number of people living in 301 dairies is 1,453 roughly 5 times more than the dairies that is, for every dairy there are on an average about 5 persons living in it, the number of milch cattle and calves is about 1,846 *i.e.*, 1,453 people connected with the dairies live with 1,856 cattle under the same roof. As I have said above only 8 dairies are somewhat detached, the remaining 293 are attached, that is, the cattle are tied in the verandahs of houses with few windows of houses opening directly into cattle-sheds. One could very well imagine the purpose these windows serve, that is, they suck in all imaginable foul and vitiated air from cattle sheds into dwellings when the windows act as inlets. Invariably the houses of these dairymen are regular dungeons, to add to this, the dairymen are often seen tying the calves inside their dwelling houses to prevent them from getting loose at nights and sucking all milk from their mothers.

The cattle-sheds are low roofed, the mean height is less than 5 feet and in sheds where it is high, the height is miserably reduced by an attic where the dairyman stores the fodder for want of room elsewhere. The cattle are so closely tied in the sheds that there is hardly an inter space of two or three feet so that the poor cattle can be seen one rubbing against another. The floor of the sheds are mostly irregularly and unevenly paved so to speak with several pieces of granite slabs thus allowing the dung and urine to accumulate and stagnate in crevices. One could very well imagine the state of bodies of cattle that lie on such floors especially the udder and teats. There is no such thing as drainage to carry away the washings of the cattle-shed, if at all there is any, it is very imperfect and deficient and washings are drained deliberately into street open sewers or drains, the consequence is, there is strong ammonical smell all along the drains.

The dung is either allowed to accumulate in the dairy premises or manufactured into bratties and dried on every available open place making the premises still more insanitary. In several of the dairies there are shallow wells, the water of which is freely used for washing cattle, dairy premises and milk vessels. In one instance I have seen a well without a parapet wall in a cattle shed which at times receives cattle-shed washings into it and in another a shallow well surrounded with cess-pits within three feet from the well. Very often it is the water from these wells that is used for washing milk vessels and probably for adulterating milk as well. If one were to visit these wells he would not be surprised to hear of several cases of fever in the town most of them if verified will be typhoid. I learn that most of the milk is supplied to supplement the milk in dairies in Cantonment. As regards storage of milk in dairies it is stored in any part of the dwelling house more often in sleeping apartments and left lying in open vessels on dusty floor under dusty roof.

When the milk is hawked about or taken out in the streets early in the morning for sale, it is invariably carried in open vessels and thus allowed to be contaminated by dust storms raised by Municipal sweepers and by flies.

In a way the cattle are more lucky than the dairywomen as they are taken out for open air to such open places as Cubbon Park, etc., for grazing, whereas the poor dairywomen are always in vitiated air generated in cattle-sheds.

The insanitary and filthy condition of the dairies and the overcrowding of cattle in the dairies in congested localities can better be imagined by a visit than by a description of any sort here.

It may not be out of place to mention here for the information of the Council members the various ways by which milk is contaminated from the time it is milked to the time it is consumed. Milk as it contains all the necessary constituents of a perfect diet, is the most fertile liquid for the transmission of disease due to the fact that milk is organic fluid derived from an animal in the puerperal condition, a highly neutritive liquid for the growth of organism gaining access to it, liable to fermentative and putrifactive changes, and rapidly absorbes gases of diffusive substances in its proximity.

Bacteria or impurities are present everywhere. Milk as it contains substances on which they can live, thrive, and grow and reproduce, offers a suitable and not less luxurious nidus or home and it absorbs gases easily.

No matter how clean our houses or our premises of business are kept, still, we find this little beings invisible to the naked eye, but their presence can be demonstrated only by the microscope. Cleanliness both personal and of the surroundings lessens the quantity and the number of bacteria or germs, and also diminishes a great deal of their existence. The bacteria that may be present in milk is observed say, when milk is left in a vessel undisturbed sometime about 6 hours, the cream the lightest of its constituents rises to the top of the vessel and at the same time we will notice that it becomes sour and that it has acquired an acid taste. Further, as stated above, the milk has strong power of absorbing gases. It will be manifest how careful we have to be to keep milk in closed vessels.

Some diseases can be traced to or propagated by the use of bad or contaminated milk. Many a disease and many an epidemic are traceable to bad milk or to milk that has become contaminated with germs characteristic of different diseases.

Epidemic of enterics fever, cholera, diarrhœa, tuberculosis, have been traced to have their source besides water, to milk and in such a case the admixture of it with foul and dirty water. Besides these diseases that may be derived from contamination of milk by infected individuals, or by gases and vapours, or by water, used for cleansing and dilution; certain other diseases may be transmitted without human or external agency, the milk cows themselves being the subjects of disease. Foot and mouth disease, tuberculosis may be so communicated.

The contamination or pollution of milk may occur either at dairies, or during the conveyance of milk.

Re : the dairies.—The fouling of milk by the bacteria of different diseases mentioned above may be caused either by dairyman himself or any of his help-mates suffering from an infectious disease, or by some outsider who has been attending on or nursing a person down with an illness, coming to the dairy on business or otherwise.

Firstly, then we have the dairyman or persons frequenting the dairies as a cause of spreading an infectious disease, by imparting to the milk, germs peculiar to the disease.

Secondly, infectious disease when propagated by the use of dirty water from lake, tanks and wells in which excreta of persons ailing from an infectious disease have been dropped in accidently or rain water that has dissolved the excreta has been allowed to percolate, that is to say drip in through the earth into the well.

Thirdly, we have the clothes used for wiping or cleansing the utensils of milk as the means of spreading infectious disease. These clothes may have been used by a person having disease or they have been in the room occupied by a person ailing exposed to the discharges carried to them by air as that of cough (tuberculosis) ; or these clothes may have been heaped together with sick persons suffering from Typoid or Cholera, or even with linen that was imperfectly cleansed that is the germs of which were not killed by disinfectants. In the next place in connection with the dairies there is the pollution of milk by the use of dirty and filthy water in cleaning the milk-cans, etc., and by giving impure water for the cows to drink.

During transit, milk may be contaminated if carried in open pails or vessels. Unless kept in clean vessels with properly fitting covers, it is a source of danger as the dust that flies off from the streets is sure to fall in or flies that have been feasting on some refuse of putrifactive matter may come to sip it and may fall into it accidently. Those who take the milk from house to house may be the source of spreading and causing an epidemic either by dilulting it with impure water or by using measures that have been soiled.

Contamination then broadly speaking may be aerial, that is carried on by air or water borne. The deduction that we can draw from above are (1) that the dairymen, the distributors and the milk sellers are to be in good health and that they have nothing to do with the cows or in the cow-sheds if they themselves are ailing with an infectious disease or are in attendance on one who has it. (2) That they should use pure clean water for all purposes. (3) That they should have clean utensils washed in clean water and if wiping be necessary to be done with clean cloth set apart for the purpose and the vessels protected with well fitting covers.

Disease in cows :—So far as disease in cow is concerned, the precautions that appear necessary are any disease of the udder and teats, this should disqualify the milk for the use of food. That a milch cow is suffering from any disease or disturbance of health be immediately isolated, and the milk not used until pronounced free from disease by Veterinary Surgeon.

While recommending to enforce strictly the bye-laws relating to the dairies, I would strongly recommend the construction of a few model dairies with quarters for dairymen in different parts of the City. Sooner this question is taken up by the Council, the better it is for the public I would consider the major portion of the nuisance in the City caused by these insanitary dairies to have abated and with it, the serious risk the public run by consuming highly polluted milk and milk products which form the chief neutrient food for vegetarians.

I have, etc.,
A. K. PANI, D.P.H., etc.,
Health Officer, Bangalore City.